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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,074	08/02/2001	Jiangtao Wang	GD7240US.CIP	6664

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EXAMINER

EASTHOM, KARL D

ART UNIT PAPER NUMBER

2832

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/921,074

Applicant(s)

WANG ET AL.

Examiner

Karl D Easthom

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-- The MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-13 is/are rejected.
- 7) ☒ Claim(s) 6 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3,4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 9-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al.
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The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. Wang discloses the claimed invention at claim 8 thereof, where

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for claims 9-12, the second metal layer is NiCrAlSi and the first metal layer is chromium oxide in the claimed range of 5-70 Å. At Example 6 of Wang, the second metal layer thickness is 100Å. In claim 13, the first and second resistor metals of the claim are interpreted broadly such that either layer, in this case the second resistor metal, is the one directly contacting the copper. That is, the NiCrAlSi layer is the first resistor metal layer of the claim because it is "on" said copper layer even though not touching or directly contacting it, and the second metal layer of CrO is on the first metal layer.

3. Claims 9-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Konicek. Konicek discloses the claimed invention at the abstract, with copper layer having a first resistor metal (eg. nickel) of .01-2.0µm and a second layer of a second resistor material (copper) of 1-12 microns. The two layers, being different metals of different or the same thickness, have a different resistance.

4. Claims 9-12 are rejected under 35 U.S.C. 102(b,e) as being anticipated by Ameen et al. Ameen discloses the claimed invention at the abstract, with copper layer having a first resistor metal (eg. zinc oxide) of 3-80Å and a second layer of a second resistor material (chromium oxide) of 20-100 microns. The two layers, being different metals of different or the same thickness, have a different resistance.

5. Claims 1-4 and 7-12 are rejected under 35 U.S.C. 102(b,e) as being anticipated by Nakahara et al. (XP-000993586). Nakahara discloses the claimed invention at the abstract, where alternating layers of Cu/Ni provide the first as a copper layer, the second intermediate layer of nickel, the first resistor metal of copper, and a second resistor metal of nickel, each within the claimed ranges (disclosed as 7-500Å). The two resistor layers, being different metals

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of different or the same thickness, have a different resistance. The intermediate layer is either a tiecoat or stabilizer layer of nickel, meeting claims 7-8.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Konicek in view of Schoerner et al. (DT2435456) or Sturm. The invention is disclosed as noted above except for the material of the first material. Schoernere discloses the material as a good conductor at the English abstract and useful as a foil with improved bending and strength, while Sturm at the bottom of col. 4 discloses it at as a good stable resistor, so that it would have been obvious to employ it in the foil of Schoerner as a conductor or resistor for the first layer thereat, given the disclosed advantages noted.

7. Claims 1-5 are Juergens et al. (EP7598) in view of Nguyen et al. rejected under 35 U.S.C. 103(a) as being unpatentable over Juergens et al. (EP7598) in view of Sturm. Juergens discloses at the abstract and sole figure, the invention except for claims 1-4, the copper layer and the thickness of the first and second resistor metals, and for claim 5, the resistor metal material. That is, the material of the contact layer 5 is not specified as copper, while the intermediate layer 4 having the claimed thickness is disclosed, and the first resistor layer of nickel chromium and the second resistor layer of nickel chromium oxide is disclosed. Sturm discloses that circuit boards typically have a copper conductive layer for contacting, col. 3, lines 35-45, so that the copper is etched, col. 6, lines 1-20, to form the contact layers such as those 5 of Juergens, such that it would have been obvious to form such a contact layer for the purpose of conforming to industry standards. The thickness of the NiCrAlSi layer is disclosed in the claimed range at col. 4, lines 35-68 as a substitute for the Nicer layer such as that of Juergens, such that it would have been obvious to form each layer in the claimed range for the purpose of changing the resistivity

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to the desired range. (The Examiner takes Official Notice that it is well known to change the thickness to change the resistivity, see eg. Clouser col. 15, lines 15-32, and col. 22, lines 48-57, disclosing that resistance and thickness are related).

8. Claims 6 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The claimed combination including the particular first and second resistor metals in the claimed thickness ranges are not disclosed or suggested.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl D Easthom whose telephone number is 703 308-3306. The examiner can normally be reached on M-Th, 5:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 703 308-1976. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.


Karl D Easthom
Primary Examiner
Art Unit 2832

KDE